STUDY ON ANXIETY IN PATIENTS WITH PARKINSON'S DISEASE

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ABSTRACT

Objective: The aim of the study was to evaluate anxiety in patients with Parkinson's disease.
Patients and method: We studied a group of 37 non-demented patients with Parkinson's disease, 17 women and 20 men, aged between 50 and 70 years. Sixteen patients were in stage I and 21 patients in stage II of the disease on Hoehn-Yahr Scale. The patients were treated either with dopaminergic agonists or with levo-dopa associated with dopaminergic agonists.
To assess the symptoms of anxiety we performed to each patient The Zung Self-Rating Anxiety Scale and The Hamilton Anxiety Rating Scale. For the depressive disorders we also performed The Hamilton Depression Rating Scale.
The results were analyzed by Student's Test and Chi-Square Test.
Results: Twelve patients (32,4%) had anxiety disorders: generalized anxiety (5 patients), panic attack (2 patients), social fobia (one patient) and unspecified anxiety disorder (4 patients). The association between anxiety and depression was found in 7 patients (48,3%). The anxiety appeared especially in the patients with left-sided motor symptoms.
Conclusion: Anxiety seems to appear frequently in the patients with Parkinson's disease but we need more data to clarify its impact on the course and the treatment of the disease.

Key words: anxiety, Parkinson's disease.

INTRODUCTION

Parkinson's disease was described for the first time by James Parkinson in 1817 and was considered for a long time a disease characterized by motor signs: rigidity, bradikinezia and rest tremor which occur due to dopaminergic striatal denervation. Even if the autonomic disorders were recognized since the original description of the disease, only in the last years the fact that Parkinson's disease is more than a movement disorder became obvious. The non-motor aspects accompany or even precede the motor signs and consist of autonomic nervous system disorders (1), neuropsychiatric disturbances (2), sleep disorders (3).

Many patients with Parkinson's disease complain of neuropsychiatric disorders: depression, dementia, anxiety, psychosis. Their appearance is linked either to the evolution of the disease or to the side-effects of the treatment.

Neuropsychiatric disorders constitute an additional source of the disability for the patients and in the same time a challenge for the physician who treats a patient with advanced Parkinson's disease (4).

PATIENTS AND METHOD

We studied a group of 37 patients admitted in The Department of Neurology of The Clinical Hospital of Neuropsychiatry, Craiova for the diagnosis of idiopathic Parkinson's disease (PD). All the patients met the diagnostic criteria for Parkinson's disease (5, 6).

The group was composed of 17 women and 20 men, aged between 50 and 70 years. The patients had at least 8 years of education and at least 25 points on Mini Mental State Examination (non-demented patients).

We performed to each patient The Hoehn – Yahr Scale because we included in the study only the patients in the first or second stage on this scale.

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Sixteen patients fulfilled the criteria for stage I on Hoehn-Yahr Scale and 21 patients for stage II on the same scale.

Each patient gave the inform consent before the inclusion in this study.

The patients in stage I were treated with dopaminergic agonists (either pramipexolum 2,1 mg/day or ropinirolum 9 mg/day) while those in stage II received dopaminergic agonists associated with levo-dopa (medium dose 476,1 mg/day).

None of the patients experienced motor fluctuations.

The patients were diagnosed with different types of anxiety or depression according to DSM IV Criteria.

To assess the symptoms of anxiety we performed The Zung Self-Rating Anxiety Scale and Hamilton Anxiety Rating Scale (HAM-A) because these scales were suggested to be used for this purpose (7).

The Zung Self-Rating Anxiety Scale (8) is composed of 20 statements. The patient chooses the statement which describes his feelings during the past week. A score between 20 and 44 is considered normal. Mild to moderate anxiety corresponds to a score of 45-59, severe anxiety to a score of 60-74 and extreme anxiety to a score of 75-80.

HAM-A consists of 14 items: anxious mood, tension, fears, insomnia, difficulties in concentration and memory, depressed mood, general somatic symptoms (muscular, sensory), cardio-vascular, respiratory, gastro-intestinal and genitor-urinary symptoms, other autonomic symptoms and changeling in behavior during the interview.

A score below 17 points suggests mild anxiety. Mild to moderate anxiety corresponds to a score of 18-24, moderate to severe anxiety to a score of 25-30 and extremely severe anxiety to a score up to 30.

Because many PD patients have both anxiety and depressive disorders we also performed to each patient The Hamilton Depression Rating Scale.

The Student's Test and Chi-Square Test were performed for statistical analysis.

RESULT

The demographic data of the study-group is revealed in the table 1 and 2.

Twelve patients (32,4%) had anxiety disorder, 6 in stage I of the disease and 6 in stage II (fig. 1).

The results obtained on Zung Self-Rating Anxiety Scale were: 25,2±3,8 points (non-anxious patients) and 46,5±6,5 points (anxious patients) ($p<0,001$).

The anxious patients obtained 19,8±5,1 points on HAM-A (mild anxiety).

Regarding the relation between gender and anxiety we have found that 6 women (35,2%) and 6 men (30%) had anxiety (fig. 2).

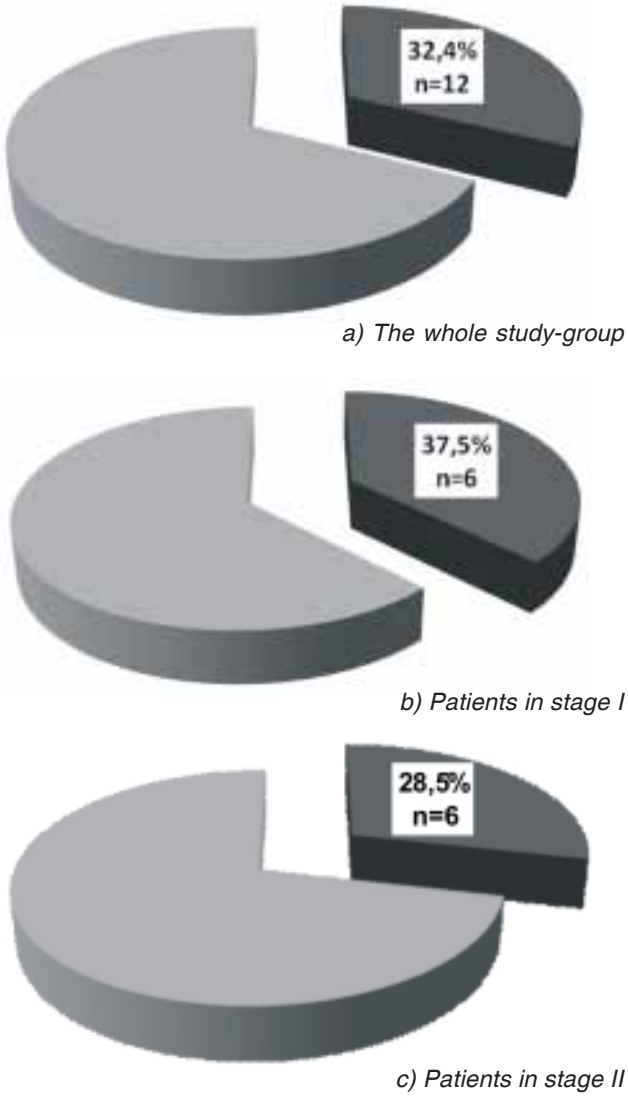
We found the association of anxiety with depression in 7 patients (58,3% of all anxious patients and 18,9% in the whole study-group) (fig. 3).

In the anxious patients group, 4 patients had motor symptoms on the left side and 5 patients predominantly on the left side.

The anxiety disorders that we have found were: generalized anxiety (5 patients), panic attack (2 patients), social fobia (1 patient) and unspecified anxiety disorder (4 patients).

The patients with depression had minor depression (4 patients) and dysthymia (3 patients).

We found some associations between different types of anxiety and depression) (table 3).



a) The whole study-group

b) Patients in stage I

c) Patients in stage II

Figure 1 (a, b, c). *Anxiety in study-group*

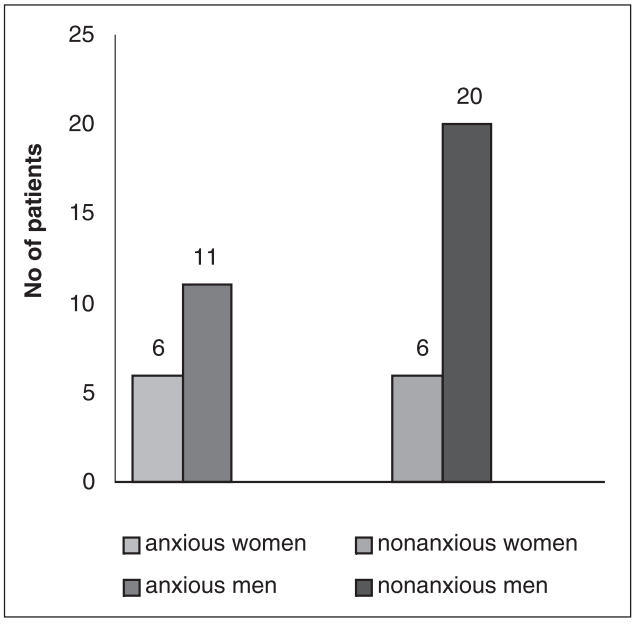


Figure 2. *The relation between anxiety and gender*

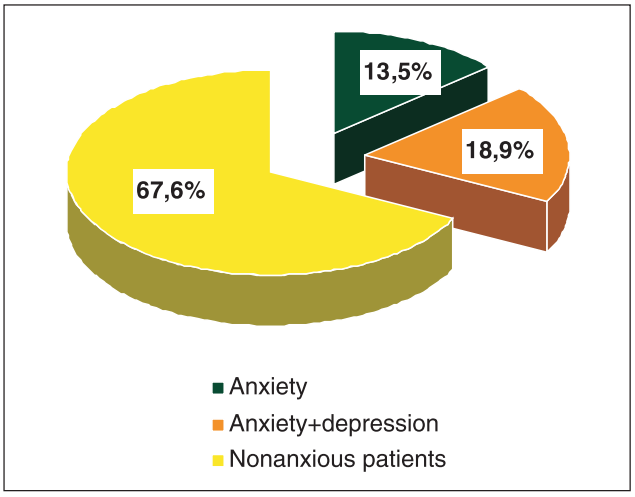


Figure 3. *The association anxiety-depression in the study-group*

Table 1. *The demographic data of the patients in stage I on Hoehn-Yahr Scale*

Gender		Age (years)	Level of education (years)	Median score on MMSE
Women (no)	Men (no)			
7	9	61,4±6,3	10,8±2,9	28,3±1,6

Table 2. *The demographic data of the patients in stage II on Hoehn-Yahr Scale*

Gender		Age (years)	Level of education (years)	Median score on MMSE
Women (no)	Men (no)			
10	11	62,9±5,8	11,2±3,1	27,8±1,7

Table 3. *The association between different types of anxiety and depression*

Patient no.	Anxiety				Depression	
	Generalized anxiety disorder	Panic attack	Social fobia	Unspecified	Minor	Dysthymia
1	+				+	
2	+				+	
3				+		+
4				+		+
5				+	+	
6			+		+	
7		+				+

DISCUSSION

A significant percentage of PD patients is diagnosed with anxiety. Our results are in concordance to those in other studies. Stein et al. (9) discovered that 38% of PD patients-group had anxiety, a percentage much higher in comparison to those in general population (5-15%). In another study, Menza et al. (10) found 29% of PD patients with anxiety disorder.

It is not fully understood the process by which anxiety appears in PD patients. The cause could be the dopaminergic deficit (9) or the influence of this deficit on other neurotransmitters such as norepinephrine and serotonin (11, 12).

It was also suggested that the short allele of the serotonin transporter gene is associated with high risk of anxiety in PD patients (13). The PD patients with panic attacks might have an alteration of α_2-adrenergic receptors (14).

In our study we found a greater percentage of anxious patients in stage I of the disease (37,5%) in comparison to those in stage II (28,5%) ($p<0,05$). This fact might be an argument for the theory by which anxiety is not just a reaction to the disability which appears during the course of the illness. It is more probably to be provoked by some neuro-biological processes which occur in PD.

We found also the association between anxiety and depression in 7 patients (58,3%). There are many studies that pointed out that anxiety and depression coexist in PD patients but in different percentage: 92% (10) or 60% (15).

In our study the anxiety is strongly related to the laterality of motor signs. It appears especially in the patients with left sided symptoms. This fact is in concordance with other studies (16, 17).

We consider that further studies are needed to clarify this real prevalence of anxiety, the duration and evolution of anxiety disorders, the necessity of proper treatment and not in the last way the impact of anxiety on quality of life in PD patients.

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